

CLAIMS:

What is claimed is:

1 1. A nozzle for supplying a pressurized fluid to an injection section that is integral to
2 an extruder die assembly, said assembly enclosed within a housing, comprising:

3 a generally tubular body having a passageway defined therethrough and
4 comprising,

5 an inlet section having a coupling mechanism for selectively connecting
6 said passageway in fluid communication with a pressurized fluid source;

7 an outlet section having a discharge port in fluid communication with said
8 passageway;

9 a first sealing mechanism for forming a seal between said body and an
10 aperture formed in said housing; and

11 a second sealing mechanism for forming a seal between said outlet section
12 and an inlet formed in said extruder die assembly, wherein said inlet
13 connects said discharge port in fluid communication with said injection
14 section.

1 2. The nozzle of Claim 1, wherein said coupling mechanism comprises a threaded
2 fitting.

1 3. The nozzle of Claim 1, wherein said coupling mechanism comprises a threaded
2 female fitting adapted to mate with threads located on a threaded male fitting attached to
3 said pressurized fluid source upon rotation of said nozzle.

1 4. The nozzle of Claim 3, wherein said threaded fitting comprises a hexagonal NPT
2 threaded fitting.

1 5. The nozzle of Claim 1, wherein said first sealing mechanism comprises a sealing
2 screw thread mechanism formed on a portion of said body, said screw thread mechanism
3 adapted to mate with threads located in said aperture upon rotation of said nozzle.

1 6. The nozzle of Claim 1, wherein said second sealing mechanism comprises a portion
2 of said outlet section having a shape that is complementary to said inlet.

1 7. The nozzle of Claim 6, wherein said outlet section is generally paraboloididal
2 shaped, and said portion of said outlet section is spherically shaped.

1 8. A nozzle for supplying a pressurized fluid to an extruder die assembly enclosed
2 within an extruder die plate, comprising:

3 a generally tubular body having an inlet section, an outlet section, and a
4 passageway defined therebetween;

5 a first sealing mechanism for forming a seal between said body and an aperture
6 formed in said extruder die plate;

7 a second sealing mechanism for forming a seal between said outlet section and a
8 supply port inlet formed in said extruder die assembly.

1 9. The nozzle of Claim 8, wherein said inlet section has a coupling mechanism for
2 selectively connecting said passageway in fluid communication with a pressurized fluid
3 source.

1 10. The nozzle of Claim 9, wherein said coupling mechanism comprises a threaded
2 female fitting adapted to mate with threads located on a threaded male fitting attached to
3 said pressurized fluid source upon rotation of said nozzle.

1 11. The nozzle of Claim 8, wherein said inlet section comprises a hexagonal NPT
2 female threaded fitting.

1 12. The nozzle of Claim 8, wherein said first sealing mechanism comprises a sealing
2 screw thread mechanism formed on a portion of said body, said screw thread mechanism
3 adapted to mate with threads located in said aperture upon rotation of said nozzle.

1 13. The nozzle of Claim 8, wherein said second sealing mechanism comprises a portion
2 of said outlet section having a shape that is complementary to said supply port inlet.

1 14. The nozzle of Claim 13, wherein said outlet section is generally paraboloididal
2 shaped, and said portion of said outlet section is spherically shaped.

1 15. The nozzle of Claim 14, wherein said supply port inlet is a concavity defined by
2 half of a sphere of a fixed radius formed in said extruder die assembly that is
3 complementary to the spherically shaped portion of said outlet section.

1 16. The nozzle of Claim 15, wherein a portion of said supply port inlet is in fluid
2 communication with an injection mechanism that is integral to said extruder die
3 assembly.

1 17. The nozzle of Claim 16, wherein said passageway defines an outlet port in said
2 portion of said outlet section, said outlet port having a lateral cross sectional area that is
3 smaller than said portion of the supply port inlet.

1 18. The nozzle of Claim 13, wherein said outlet section is smooth.

1 19. A nozzle assembly for supplying a pressurized fluid to an extruder die assembly
2 enclosed within a housing, comprising:

3 a generally tubular body having passageway therethrough defining an inlet and a
4 discharge, and comprising,

5 an inlet section having a coupling mechanism for selectively connecting
6 said inlet in fluid communication with a pressurized fluid source;

7 a middle section having a first sealing mechanism formed thereon for
8 forming a seal between said body and an aperture formed in said housing;

9 an outlet section having a portion containing said discharge and having a
10 second sealing mechanism for forming a seal between said portion of the
11 outlet section and a supply port inlet formed in said extruder die assembly.

1 20. The nozzle assembly of Claim 19, wherein said inlet section is selectively attached
2 to said a first end of said middle section and said outlet section is selectively attached to a
3 second end of said middle section.

1 21. The nozzle assembly of Claim 19, wherein said coupling mechanism comprises a
2 threaded female fitting adapted to mate with threads located on a threaded male fitting
3 attached to said pressurized fluid source upon rotation of said nozzle.

1 22. The nozzle assembly of Claim 19, wherein said inlet section comprises a hexagonal
2 NPT female threaded fitting.

1 23. The nozzle assembly of Claim 19, wherein said first sealing mechanism comprises a
2 sealing screw thread mechanism formed on a portion of said middle section, said screw
3 thread mechanism adapted to mate with threads located in said aperture upon rotation of
4 said nozzle.

1 24. The nozzle assembly of Claim 19, wherein said second sealing mechanism
2 comprises a portion of said outlet section having a shape that is complementary to said
3 supply port inlet.

1 25. The nozzle assembly of Claim 24, wherein said outlet section is generally
2 paraboloididal shaped, and said portion of said outlet section is spherically shaped.

1 26. The nozzle assembly of Claim 25, wherein said supply port inlet is a concavity
2 defined by half of a sphere of a fixed radius formed in said extruder die assembly that is
3 complementary to the spherically shaped portion of said outlet section.

1 27. The nozzle assembly of Claim 26, wherein a portion of said supply port inlet is in
2 fluid communication with an injection mechanism that is integral to said extruder die
3 assembly.

1 28. The nozzle assembly of Claim 27, wherein said discharge has a lateral cross
2 sectional area smaller than said portion of the supply port inlet.